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Hybrid Regimes for Local Public Goods Provision: A Framework for Analysis*

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There is a growing recognition that the state is not the sole provider of “local public goods” such as water and education in the developing world. Mainstream approaches to the study of local public goods provision, however, have yet to incorporate these insights. This paper offers a descriptive typology of *hybrid* local public goods regimes, or systems in which both state and non-state actors contribute to provision. It emphasizes two dimensions: the *type of state involvement* (direct versus indirect provision), and the *prevalence of non-sanctioned, private providers*. The politics of producing local public goods, we argue, takes on distinct forms in each cell. The framework allows scholars to develop more accurate and precise explanations of variation in service quality and access, and choose more appropriate outcome measures. We illustrate the utility of this framework by analyzing distinct hybrid regimes for water and sanitation and mass transit in Africa, Asia, and Latin America.

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There is a growing recognition that the state is not the sole provider of “local public goods” in the developing world. Scholars of comparative politics have highlighted efforts by sectarian organizations, political party affiliates, kinship networks, and nongovernmental organizations to supplement ineffective or absent state services in the Middle East, India, and Sub-Saharan Africa.¹ Even more prevalent—especially in urban areas—are small-scale entrepreneurs, who have become major providers of education, water, electricity, trash collection, and other basic services.² Relatedly, scholarship on market liberalization shows that the state often regulates private provision rather than providing services directly: the neoliberal reform wave saw the establishment of regulatory agencies in sectors such as electricity, telecoms, and water alongside privatizations throughout much of the developing world.³

Mainstream approaches to the study of local public goods provision, however, have yet to fully acknowledge the importance of non-state and regulated provision. In this paper, we will show that most studies employ theoretical accounts and measurement strategies that assume that the state provides services. To employ a particularly well-cited example, it is argued that cross-country variation in infrastructure quality and educational attainment can be explained by varying levels of ethnolinguistic fractionalization, which affects preferences regarding government policy, and thus the ease of governance.⁴ In short, this argument *assumes* that state policy is responsible for public goods delivery, rather than examining the state’s role empirically.

It is important to interrogate whether or not the state is actually providing local public goods, as doing so allows for precise theorization. For example, scholars might observe that policing is more effective in more homogenous communities. Yet the causal

mechanism linking homogeneity and service quality would be different when the state provides policing than when neighborhood organizations employ off-duty police officers to patrol their neighborhoods. Relatedly, the way in which political competition affects service access will look different where the state provides services directly than where it regulates private provision.

Similarly, outcome measures that make perfect sense when states are the sole provider of services may be inappropriate when alternative providers supplement or substitute for state provision. For example, the percentage of the population with household water connections will not reflect levels of government-provided services where small-scale providers supplement state provision: small-scale, independent providers often operate networks in areas not serviced by government-owned utilities, and households often contract with independent tanker services when water only flows intermittently through the state-operated pipe network.

Our contribution in this paper is to offer a descriptive typology ⁵ that differentiates between the four main types of “hybrid systems” for local public goods provision in the developing world. By *hybrid*, we refer to systems in which the state and non-state providers contribute to service delivery; state and non-state actors either deliver services simultaneously, or state agents regulate private service provision, either formally or informally. We focus on systems with extensive participation by the private sector, as this is the most common scenario in most sectors and developing countries, especially in urban settings. The typology is intended to help researchers develop theoretical arguments appropriate to settings where different configurations of actors exist, as well as inform choices regarding measurement. While scholars have identified different types of

non-state providers and their distinctive modes of engagement with the state,⁶ our contribution is novel because it characterizes different *system-level configurations of actors and roles*. Our framework thus positions scholars to theorize regarding the politics driving variation in system-wide levels of local public goods provision, as well as develop appropriate measurement strategies for cross-jurisdictional comparisons.

Hybrid local public goods provision regimes in the developing world, we argue, vary on two key dimensions. One must first consider the *type of state involvement*. Governments can provide services directly, or instead provide them indirectly by delegating to non-state providers, such as through formal contracts, usually with private firms. Second, one must consider the *prevalence of non-sanctioned, private providers*. Where services are of poor quality or coverage is patchy, alternative providers often arise to supplement or substitute for state-sanctioned services.

Recognizing these two dimensions allows one to distinguish between four different modes of *hybrid local public goods provision* in the developing world for services as varied as education, electricity distribution, garbage collection, and water delivery. First, there are cases in which governments provide services directly, and are the dominant provider; services are of sufficient quality and reach that alternative providers only arise at the margins. Second, there are cases in which governments attempt to deliver services to the majority, but do so insufficiently; in such cases, non-sanctioned providers emerge to “supplement” government provision. Third, there are cases in which governments explicitly delegate service provision to private actors and formally regulate provision. Finally, there are cases in which states look the other way when private actors provide services—often because they have given up on satisfying

demand on their own—but are incapable of or unwilling to regulate them directly. Instead, state agents informally regulate providers. In each of these cases, the ways in which one measures the quality and reach of service will vary, as will the ways in which one theorizes regarding the politics driving variable performance.

This paper begins by showing that the extensive political science and economics literature on “local public goods provision” focuses on cases of direct state provision of services, or simply assumes states are providing services—at times where this is inappropriate. It then introduces our descriptive typology, noting that these different models tend to be associated with varying levels of state capacity and the extent to which private actors find it profitable or strategic to provide services. The second half of the paper illustrates the distinct political dynamics of these different modes of local public goods provision in the developing world through analyses of service provision in two sectors, water and sanitation and mass transit. The final section of the paper shows that this framework applies well to other policy areas examined by scholars of local public goods provision and discusses implications for future research.

THE EXISTING LITERATURE

The Political Science and Economics literature typically examines local services and infrastructure as a problem of “public goods provision.” Our review of the existing empirical literature on local public goods provision in the developing world suggests that the vast majority of scholarship either explicitly or implicitly assumes that state agencies provide services.⁷ Table A.1 (online appendix) contains the 100 empirical studies focusing on or including developing countries as part of a broader cross-section. Two-

thirds assume that the state provides services.⁸ Meanwhile, the majority of those not assuming state provision examine co-production between governments and citizens, associations, or traditional authorities.⁹ Miguel and Gugerty,¹⁰ for example, study parent fundraising for village schools. These emphases are problematic for two reasons. First, many studies assuming state provision employ access or quality measures that reflect both state and non-state provision. This is most common in cross-country analyses using countrywide measures for outcomes such as infrastructure access, infrastructure or service quality, and educational attainment, which include some of the most prominent in the literature.¹¹ Second, while co-production is important—especially in rural settings—the most prevalent types of non-state provider are non-sanctioned, private entrepreneurs that supplement or substitute for state service provision, especially in cities. Remarkably, they have received very little attention (see Table A.1).

We therefore urge social scientists studying local public goods provision in the developing world to step back and consider the typical configurations of actors involved in service provision, as well as their respective roles. In a given locality, *hybrid local public goods regimes* are the norm: state and non-state providers contribute to service delivery, but not necessarily in a collaborative fashion. State and non-state actors either deliver services simultaneously, or state agents regulate private service provision, either formally or informally.¹² As the key actors and their roles in service delivery shifts, so does the process by which services are created and delivered, as well as how service quality and access are best measured.

While there is growing scholarly recognition of the importance of non-state provision of local public goods and services, we know little about the overarching

dynamics of hybrid systems. The small, emerging literature on non-state provision focuses on specific types of non-state providers rather than offering overarching theoretical accounts—or measurement strategies—appropriate for contexts with both state and non-state providers. Path-breaking studies such as MacLean,¹³ Cammett,¹⁴ Thachil,¹⁵ and Brass¹⁶ analyze the politics of welfare provision or local service delivery by informal institutions of reciprocity, sectarian organizations, informal arms of political parties, and NGOs respectively, but do not provide general conceptual frameworks distinguishing between different types of local public good delivery systems. Cammett and MacLean¹⁷ helpfully distinguish between different types of non-state providers based on levels of formality and country of origin. They also provide a typology predicting that the political consequences of non-state service provision will vary with the respective strength of the provider and the state, thereby facilitating comparisons *within* political jurisdictions and sectors.¹⁸ The one effort to identify different overall system types, Gough and Wood,¹⁹ helpfully differentiates between “welfare state regimes” – in which the state protects citizens from the market – and “informal security regimes” – in which alternative providers may meet needs – yet does not specify how the politics of producing local public goods and services varies between them. Importantly, neither Cammett and MacLean²⁰ nor Gough and Wood²¹ distinguish between direct and indirect provision in their frameworks, despite the fact that the politics of production varies dramatically in each case.

In summary, the existing literature has contributed greatly to our understanding of factors driving variation in service delivery by public agencies and has identified a range of non-state service providers with varying motivations and political relationships with

the state. What is missing, however, is an analytic framework that describes “ideal type” organizational settings for public goods provision in the developing world, where hybridity is the norm.

HYBRID REGIMES FOR LOCAL PUBLIC GOODS PROVISION

We offer a “descriptive typology”²² designed to help scholars of local public goods provision to identify the contexts in which standard theoretical arguments are most applicable, to distinguish areas where new theorization is needed, and to collect appropriate outcome measures. The two dimensions of our typology reflect to distinct ways in which systems can be hybrid: the *type of state involvement* in service provision (direct versus indirect), and the *prevalence of non-sanctioned, private providers*. The type of state involvement captures the extent to which states provide services directly, as opposed to delegating to non-state providers. Formal delegation can take the form of offering concession contracts or franchise agreements for investment in and management of water or transit systems, or simple short-term service agreements with nonprofits to provide social assistance in return for state funding. Certainly, delegation can be conceived of along a continuum involving more and less state involvement in direct service delivery (and conversely, more and less indirect involvement through regulation).²³ However, it is helpful to start by considering the simple distinction between direct and indirect provision, where very different causal mechanisms generate variation in service quality and reach.

The *prevalence of non-sanctioned private providers* dimension reflects the extent to which private providers supplement state or state-sanctioned providers. This

“supplementation” will be most visible outside the reach of the physical networks or service catchment areas serviced by the state or its agents, yet it can also occur extensively in areas where citizens access official services, but these services only arrive intermittently or are of poor quality. Formal state contact with these providers, such as through licensing systems, is usually minimal, though state agents usually have informal relationships with providers. For simplicity, we distinguish here between systems with minor versus extensive participation by unsanctioned providers. While each of these two dimensions has received some attention in specific literatures on particular policy areas, they have not yet been brought together into a common framework.²⁴

As shown in Table 1, examining variation along these two dimensions leads us to consider four different hybrid systems of local public goods provision. In “state-dominant” systems (upper left), the state provides reasonable quality services directly to a large fraction of the population. Private provision is limited to small areas such as some informal settlements or the urban fringe. In such contexts, we can reasonably attribute services to the state. This means that the politics of service production and allocation, at least in democracies, is likely to be captured by factors already stressed in the local public goods literature, such as the number of political parties, levels of political competition or decentralization, and the politics of intergovernmental relations. Meanwhile, standard measures of service access reported in state data, such as possession of a household connection, usually reflect *actual* access. Similarly, measures such as standardized test scores or literacy rates reflect the quality of state service provision.

[TABLE 1 ABOUT HERE]

In much of the developing world, however, local governments do not monopolize service delivery. Instead, we often observe a “supplemented state” where the state provides services directly, but governmental services are poor and/or fail to reach large fractions of the population (Table 1, upper right). Citizens therefore seek services from alternative sources, and non-sanctioned, private providers arise to meet these demands. In such contexts, theoretical arguments regarding sources of variation in system-wide service quality and reach need to acknowledge the presence of—and political interactions between—private service providers and state actors as well as the electoral, regime preserving, and bureaucratic politics animating state provision. As we will show later in this paper, state agents tend to informally “regulate” small-scale private providers, often charging them for unofficial access to state supplies or market access. These relationships can be collusive, or exploitative of either firms or the state. In other words, we see more than just NSP appropriation of state resources, as would be implied by the Cammett and MacLean²⁵ framework for cases of low state capacity and low capacity providers; state agents also prey upon small providers.

Measuring the reach and quality of state services, or service provision in aggregate, is more difficult under a “supplemented state” than a “state dominant” system. Extra care must be taken to ensure that measures of service reach or quality are in fact accurate, and attributed to the correct provider. For example, it means little to have a state electricity connection if power only arrives occasionally through the state network, and one must rely extensively on private generators. While nighttime satellite data can yield better estimates of access to electricity through both state and non-state sources such as

generators than census data (e.g. Min ²⁶), one needs yet more fine-grained and often original data to distinguish between actual provision by the state and private generators.

When local governments choose to provide services indirectly, such as through contracts with private or nonprofit entities, and actively regulate, we observe “regulated provision” (Table 1, lower left).²⁷ Systems involving public private partnerships—i.e., privatization—complemented by state regulation would fall in this category. For example, governments may enter concession contracts for electricity distribution, or contract out the management of publicly owned hospitals. Research on local public goods provision in such contexts should involve careful theorizing regarding formal regulatory politics,²⁸ and how it can explain variation in service outcomes. This means understanding the respective influence of government officials, regulated firms, and the public on service delivery, which can vary systematically with the institutional environment, levels of political competition, and firm characteristics. It should also examine the interactions between state-sanctioned providers and the non-sanctioned private providers that operate at system margins. Meanwhile, outcome variables should be measured so as to coincide with the boundaries of service areas allocated to specific non-state providers, which may not align with administrative boundaries. Governments may out-source electricity provision in urban municipalities to a private concessionaire, for example, while retaining responsibilities for rural jurisdictions. Outcome variables may also need to be disaggregated if only certain service segments or sectors have been outsourced. For example, if electricity distribution has been privatized, but generation remains in public hands, distributors should be credited with new connections but not be faulted for service disruptions stemming from insufficient electricity supply.

Finally, when states leave service provision almost entirely to non-state providers and provide minimal formal regulation or oversight, we observe a “free” market hybrid system (Table 1, lower right). For example, “public” transit in urban Uganda is comprised primarily of loosely regulated, privately-operated minibuses and motorcycle taxis²⁹. In such cases, state-centered theories emphasizing electoral politics are likely to provide less analytic leverage in analyses of variation in service reach and quality. Rather, the politics of the system are characterized by informal rent extraction and collusion, as well as self-regulation by private providers. State agents often levy informal charges for market access and evading safety regulations. Providers, meanwhile, often organize in order to manage competition and protect themselves against predation. When studying variation in service access and quality across jurisdictions in such systems, scholars may also need to collect original data to measure service quality or reach, as state governments are unlikely to possess accurate information about services they barely monitor.

While we provide this *descriptive* typology to assist scholars with theorization and research design, we also note that the presence of these four different types of systems tends to be associated with the type of local service and underlying levels of state capacity. States often opt to provide services directly in natural monopoly sectors. Conversely, “local public goods” for which private providers can deliver effective substitutes for the services offered by the state tend to be characterized by less direct governmental provision of services. Where private substitutes are available, governments will feel less compelled to prioritize investments sufficient to actually deliver services on their own. Preferences for contracting out services to private providers, however, can

vary with the ideology of the governing party, as well as recent experiences with public or private provision. This means that within a single city or subnational jurisdiction, states may choose to provide some services directly and others indirectly. For example, the same municipality may contract out mass transit and retain operational responsibilities for primary education.

Meanwhile, greater involvement by unsanctioned, private providers tends to correlate with low levels of state capacity—i.e., the state’s ability or willingness to administrate effectively throughout its territory. While electoral concerns may occasionally prompt governments to regulate private operators more vigorously, their efforts are likely to be ineffective and wane quickly. This implies that we will not only observe cross-national variation in the prevalence of service provision by non-sanctioned, small-scale private providers; one may observe variation across subnational jurisdictions when subnational state capacity varies. A capital city may possess a “state dominant” water system, while a medium-sized town’s water system may be better characterized as a “supplemented state.”

EMPIRICAL ILLUSTRATIONS OF THE FOUR SYSTEM TYPES

While *hybrid provision* occurs throughout almost all of the policy areas considered by the local public goods provision literature, we focus on two paradigmatic sectors to illustrate the importance of the two dimensions we highlight: water and sanitation (W&S) and mass transit. W&S is typically delivered by the state, with higher levels of supplementation where state capacity is weak, whereas motorized mass transit is typically delivered by the private sector, with varying levels of state regulation. In the rest

of the paper, we draw studies of both sectors from Political Science, Economics, Geography, Urban Studies, and Public Policy to illustrate the distinctive politics of production and measurement challenges associated with each type of hybrid system.³⁰

“State Dominant” Systems in Water and Sanitation

In developing countries with middling and higher levels of state capacity, provincial or local governments tend to provide water and sanitation services directly to large fractions of the population, rather than rely on private sector providers.³¹ Services within the network are generally available 24 hours a day with sufficient pressure to fill household tanks,³² and are of sufficient quality that “supplementation” by private entrepreneurs is typically limited to bottled drinking water. In such contexts, the “hybrid” aspect of these systems is typically limited to the few areas where networked state services do not yet reach: non-state, small-scale entrepreneurs and cooperatives typically only service the urban fringe, informal settlements, and fast-growing small towns.³³ Such water system configurations exist in a variety of middle-income countries, including Argentina, Brazil, Costa Rica, Mexico, South Africa, and Uruguay (Table A.2, online appendix).

In state-dominant water and sanitation systems, measurement and theorization can follow what has been standard practice in the existing literature on local public goods provision. Theorization regarding the political sources of variable performance among different systems can focus on *electoral and bureaucratic politics*, as the local public goods provision literature typically does, emphasizing factors such as partisan competition, coalition-building dynamics, and variation in the ease of “governance”

under different conditions. Care should be taken to tailor arguments, however, to the exact institutional setting for provision. Government service providers may be insulated from electoral politics—at least in formal terms—when providers are “corporatized,” that is, established as legally separate entities, often incorporated under private rather than public law.³⁴

Measurement can often rely on government data to measure service reach and quality, such as data on household connections and water pressure levels, though it must still be interpreted with caution. Provider-level data may underestimate access due to informal connections and low-level corruption (e.g. employees enrolling households but then not entering them formally on the utility books). Census data on coverage needs to be carefully matched to the actual service area boundaries of particular subnational utilities, which often do not service the entire territory of a given province or municipality.

Water provision in Argentina provides an instructive illustration of a state-dominant system. Provincial governments provide urban water and sanitation services in urban areas, in most cases through “corporatized” state-owned companies.³⁵ Most households receive service 24 hours a day, and coverage rates are in line with other middle to upper income countries.³⁶ Provincial utility services are of sufficient quality that most consumers do not rely on alternative service providers. Non-state provision is confined to the urban fringe and small towns: small-scale providers, such as user-owned cooperatives or municipal government departments, service such areas,³⁷ and on the urban fringe, households often rely on wells or small-scale private water vendors, which often supply water that does not meet health standards.³⁸ Historically, the politics of user

charges and investment in this sector has reflected regime preservation and electoral concerns. Providers did not raise user rates in line with inflation out of concern for public opinion, and prioritized expenditures on personnel and electorally profitable investments in network expansion over investments in basic system capacity.³⁹

The “Supplemented” State in Water and Sanitation

In contrast to the monopoly government provision observed in “state dominant” systems, most consumers interact directly with small-scale or informal non-state W&S providers under the “supplemented state.” Governments still provide services directly in such contexts, but do so ineffectively. A largely case study-based literature in urban planning and geography—as well as research reports published by international financial institutions—shows that this encourages households and businesses to turn to alternative, and usually private, providers.⁴⁰ Intermittent service and poor water quality tends to dampen consumer payment rates to state providers, starving them of funds to invest in system maintenance and upgrades, leading to further reductions in service quality.⁴¹ In addition, state providers have difficulties expanding the geographic reach of services such that large fractions of the population must rely on alternative, non-state providers. Scholars report that just over half of the populations of cities like Lagos,⁴² and well under half of the urban population in Dar es Salaam, Tanzania,⁴³ and Uganda, Mozambique, Rwanda, Nigeria, and Madagascar enjoy network access through household connections.⁴⁴ Those living outside the reach of the formal network tend to rely on poor-quality wells, water tanker trucks, small-scale networks, or small-scale water vendors, who often charge more money for water than the charges levied for those with

official household connections.^{45,46} The literature describes such system configurations in cities in a variety of low or low-to-middle income countries, including Ethiopia, Ghana, Nepal, Nigeria, Tanzania, and Yemen (Table A.3, online appendix).⁴⁷

Scholarship on “supplemented state” systems requires very different theorization and measurement strategies than scholarship on state-dominant systems. Production and allocations within state catchment areas are often driven by *electoral, regime maintenance, and bureaucratic politics*. These dynamics are accompanied, however, by the informal regulation of small-scale, private providers by state agents best characterized in terms of *collusion* and *extraction*. The state typically builds and manages major infrastructure such as water treatment plants and core distribution networks, and small-scale providers usually negotiate formal access to this supply to obtain water to sell informally to households. While the state does little to formally regulate these alternative providers, state agents often structure these markets through informal relationships. Entrepreneurs often obtain the rights to control standpipes or operate tanker services in a given area through payoffs or connections, at times splitting their earnings with state agents.⁴⁸ Also, political actors may discourage expansion of the piped network into informal settlements, which often house the majority of urban residents, and cut into the profits of private vendors servicing non-networked customers.⁴⁹

Meanwhile, standard governmental measures of service access, such as household connections, will not give one a good sense of service access in practice given that services are only available intermittently. It is important to collect more fine-grained data regarding service frequency and the ability of households to cope with intermittency through the purchase of overhead tanks or services from alternative vendors. Such data is

not available off-the-shelf, and typically must be collected by researchers.⁵⁰ Similarly, one cannot assume that household connections are supplied by the state; services may be provided by private networks distributing bulk water obtained informally from the state.

The Indian water sector provides an instructive illustration of these dynamics. Throughout much of urban India, households rely substantially on largely unregulated, non-state service providers—although these service providers often have unofficial relationships with state agents. For households fortunate enough to live within reach of state piped water networks managed by state water or “Jal” boards, low quality, intermittent service prompts households to “supplement” state services with those from alternative providers. Indian cities typically supply water 4-5 hours a day, though some areas receive services every several days.⁵¹ While more affluent households can afford overhead storage tanks, low-income households must often turn to alternative providers, such as vendors drawing on local well water or bulk water obtained from the utility, especially when unexpected disruptions to supply occur.⁵² Water provided by state agencies is often contaminated,⁵³ creating a vibrant market for bottled water.⁵⁴ Finally, those who cannot afford or who do not have the legal status necessary to secure a formal utility connection often informally purchase water from connected households, especially where public standpipes do not exist and/or are operated for private or political gain.⁵⁵

Ethnographic studies suggest that politicians not only influence how water is allocated by state utilities,⁵⁶ but that they actively structure informal markets for access to utility water⁵⁷ and alternatives to state services available within the network. Cooper,⁵⁸ for example, describes politicians’ use of community standpipe projects for vote banking in Mumbai, and their often violent, collusive efforts to maintain local

monopolies. In low income areas in Bangalore, Ranganathan ⁵⁹ found that water tanker services often colluded with local politicians and bureaucrats to restrict tap water supply for particular areas, and thus increase their sales. In Mumbai, Graham et al. ⁶⁰ found that middlemen increased the cost of securing formal utility connections dramatically in order to pay off municipal officials and the police.

Meanwhile, nearly half of India's urban population does not possess a piped water connection. ⁶¹ This leaves a large set of households reliant on alternative providers or wells, which often suffer from contamination. In some cases, state water boards formally contract with tankers to distribute bulk water to areas where they cannot offer networked services. ⁶² In other cases, however, markets for substitutes are regulated more informally, with politicians overseeing informal markets serviced by "water mafias."⁶³

Regulated Provision in Urban Transport

In middle-income countries with middling (or higher) levels of state capacity, our review of the literature suggests, states actively regulate *a small group of large private sector transport companies* operating high capacity vehicles in urban transport systems. ⁶⁴ This is particularly the case in large urban areas. Governments (usually state or local) grant routes to private firms, while financing system infrastructure, such as bus stations. They tend to regulate market entry, pricing, and service characteristics (such as vehicle conditions) with varying levels of vigor and success. ⁶⁵ Regulated service provision has come to the fore following disappointing experiences with public provision, in which inefficient state bus companies failed to keep pace with demand and small-scale, often informal providers secured significant market share. ⁶⁶ The literature describes such

transportation system configurations in a variety of middle-income countries, including Argentina, Brazil, Chile, and South Africa (Table A.4, online appendix). Note that in many of these countries, states have chosen to provide water services directly while outsourcing motorized transport.

Explaining variation in the levels of service provision under “regulated provision” requires theorizing regarding *formal regulatory politics* rather than standard electoral and bureaucratic influences upon service delivery. Researchers should consider when political or corporate capture of the regulatory process is more likely, and the implications for investment and service access. Meanwhile, measures of service quality and reach must be obtained from regulatory agencies and/or directly from providers, and should be scrutinized for accuracy. Researchers also need to assess the extent to which smaller-scale or informal service providers are operating, and attribute performance to the correct entity.

Bus regulation in Santiago, Chile, provides an instructive illustration of a regulated hybrid system. Starting in the 1990s, the Chilean government began to regulate more actively the private bus services in the capital. Despite its efforts, however, services suffered from safety hazards, pollution, and congestion.⁶⁷ In 2007, the government began implementing “Transantiago,” a new regulatory scheme intended to improve the quality of private bus services, as well as improve coordination with previously unregulated minivans. Under the new system, a limited number of concession contracts were granted for specific “trunk” and “feeder” routes.⁶⁸ The new system attracted significant political controversy when total transit times increased dramatically due to reduced bus frequencies and the increase in bus transfers required for most commutes.⁶⁹

Under the plan, passenger totals exerted little influence on operator payments, incentivizing noncompliance with governmental regulations regarding frequency.⁷⁰ Responding to these problems, the government passed a law increasing the government's regulatory powers, and in 2011 pushed firms to renegotiate their original contracts so as to address public concerns regarding bus frequencies, service quality and routes.⁷¹ Renegotiated contracts thus reflected the respective concerns and leverage of several parties: the government, which was concerned about public opinion in the country's largest metro area; incumbent bus operating firms, who possessed leverage because they had the power to affect service quality and frequency directly;⁷² and potential investors in new auctions, for whom the government wished to signal a secure investment environment.

“Free” Market Hybrid Provision in Urban Transport

Motorized urban transport in low-income and lower middle income countries with low state capacity can be characterized as “free” market hybrid systems. Here, states play only minor formal roles through direct service provision or active regulation. The vast majority of citizens using motorized mass transit rely on small-scale operators, usually informal.⁷³ In the 15 Sub-Saharan African cities studied by Godard,⁷⁴ for example, between 68% and 100% of all public transit trips—and usually between 90% and 98%—were conducted via small-scale providers in 1998. Often termed “paratransit,” these small-scale providers range from mini-buses and vans, which serve more centrally located areas, to smaller vehicles such as three-wheelers and motorcycles offering feeder services.⁷⁵ In many post-colonial settings—such as Central Asia and Sub-Saharan Africa

outside of South Africa—governments faced strong incentives to set fares well below costs so that they were affordable to their relatively poor populations,⁷⁶ yet lacked the resources and political will to adequately compensate the publicly or private owned companies operating services. This led large-scale bus companies to almost disappear.⁷⁷ Small-scale and often informal service providers emerged to fill service gaps. The literature describes such system configurations in a variety of low and low-to-middle income countries, including cities in Ethiopia, Georgia, Ghana, Kenya, the Philippines, Senegal, Thailand and Uganda (Table A.5, online appendix).

Theorization regarding why some cities enjoy higher quality or more accessible transport than others will look very different in “free” market hybrid systems than in the systems previously discussed. Case studies suggest that while route-based paratransit providers such as mini-buses and vans may have licenses, they are typically not subject to other types of formal regulation, or can easily evade regulations that exist.⁷⁸ As under the “supplemented state,” state agents in “free” market contexts instead *informally regulate* providers. However, the particular state agents involved is likely to differ from the “supplemented state” scenario, since the state does not possess important underlying infrastructure like bulk water supply that can be sold to informal providers. Associations and individual owner-operators negotiate informal arrangements with local officials like the police for permission to operate within certain geographic areas, often in exchange for informal fees.⁷⁹ Relationships thus involve both *collusion* and *extraction*. Paratransit operators, in turn, often form associations, which in turn *regulate their own members* with respect to routes and scheduling and defend themselves and their turf.⁸⁰

Measurement of service reach and quality presents particular challenges for researchers in “free” market hybrid systems. State authorities usually have very little systematic information about small-scale or informal operators. Researchers must assemble information regarding providers, networks, and routes from scratch. While Klopp *et al.*⁸¹ have managed to map the routes travelled by Nairobi’s minivans by sending out research teams with GPS units, such efforts are labor-intensive and only capture the contours of a fluid system at one point in time. Researchers will likely need to consider means of crowdsourcing data on prices, routes, service frequency, and routes.

Nairobi’s system of motorized transport, dominated by largely unregulated minivans and small buses (14-25 seats) called “matatus,” provides a concrete illustration. While 65% of Nairobi residents walk to work because they cannot afford motorized transit, roughly 32% turn to matatus.⁸² The Kenyan government finally legalized the matatu sector in 1973 after failed attempts to meet demand on its own through public buses, especially in the face of urban growth and the attendant growth of informal operators.⁸³ Regulatory oversight is minimal: matatu drivers show almost no respect for official regulations, traffic laws, and government-defined routes.⁸⁴ The matatu sector is characterized by atomized ownership⁸⁵ with owners self-organized into associations that manage routes and terminals,⁸⁶ as well as relationships with the police and politicians.⁸⁷ The most profitable routes tend to be controlled by former police officers or gangs, and matatus that run these routes are unsurprisingly some of the most flagrant offenders of traffic laws and other regulations.⁸⁸ On the one hand, this “free” market provides flexible services to a large population that would otherwise have difficulties traveling throughout the city. On the other hand, it is characterized by high prices, safety hazards for

pedestrians and riders, occasional bloody battles between the gangs controlling different routes, ⁸⁹ and collusion between state agents and service providers. Politicians and police benefit from the informality of the system, which allows them to extract bribes from drivers and companies in exchange for foregoing vehicle inspections and even impoundment. ⁹⁰

CONCLUSION

Organizational configurations in the transport and water and sanitation sectors of the developing world suggest the importance of differentiating between key types of *hybrid local public goods provision regimes*, or systems in which the state and non-state actors both contribute to service provision. There are two distinct modes of hybridity to consider: the *type of state involvement* and the prevalence of *non-sanctioned, private providers*. State services can be provided directly, or indirectly via regulating private provision. And state-sanctioned service providers can constitute the main service providers in a system, or they can coexist with less formal, private operators who supplement their offerings both inside and outside of official networks or catchment areas.

Considering these two dimensions yields four ideal-type hybrid systems, each of which involves distinct *politics of production*. First, there are systems dominated by formal state service provision. Here, electoral, regime-maintenance, and bureaucratic politics affect the reach and quality of services. Second, there are systems in which the state actively regulates non-state provision of services. In this case, regulatory politics will dominate. Third, there are systems in which the state provides services for much of

the population, but services are so deficient that consumers are willing to pay non-sanctioned private providers to supplement public provision. In such systems, the politics typically characterizing state provision will be complemented by informal, collusive and extractive relationships between state agents and service providers. Fourth, there are systems in which states provide few services directly and make little attempt to regulate non-state providers formally — what we term “free” market hybrid systems. Here, state agents such as police collude with and extract from providers, and providers typically engage in self-regulation.

Though this paper has offered depictions of these distinct organizational configurations for just two policy areas, we expect the framework to provide a useful analytic starting point for scholarship on other types of local public goods provision. We expect police protection, primary education, local health services, parks and local roads to constitute cases of “state dominant” systems in settings with reasonably high state capacity, and “supplemented states” in settings with weaker state capacity. For example, almost all governments maintain police forces. Yet in contexts where police services are ineffective or do not serve the majority of the population, neighborhoods and companies will supplement state provision through contracts with private security firms or the formation of vigilante groups. Trash collection and electricity distribution (in countries that have privatized these services) usually constitute examples of the “regulatory hybrid” model in countries with medium-to-high levels of state capacity, and the “free” market hybrid model in countries with lower levels of state capacity. Surveys of the existing policy literature on each of these services, as well as original empirical research, could

establish whether or not these service areas indeed conform to our typology, as well as identify scope conditions.⁹¹

We suggest that there are important analytic payoffs to distinguishing which of these four organizational configurations best characterize the set of cases under examination. As we show for W&S and motorized mass transit, doing so will allow for the choice of appropriate measures of outcomes of interest, as well as reasonable conceptualizations of the causal process linking variables of interest with particular service outcomes. In other words, the *political processes* driving variation in service quality and reach differ systematically across these system types, something that should be reflected in theorization regarding variation across cases.

Defining common organizational settings for local public goods provision serves another important purpose: it helps scholars think more systematically about the scope conditions for their findings. Whether one employs qualitative research involving case studies, analyzes data from a large set of cases, or employs an experimental approach, it is important to think about the set of cases for which particular relationships are likely to hold. For qualitative and experimental researchers, thinking systematically about categories of cases influences the extent to which one views studies from a particular locale or set of locales as reflective of phenomena elsewhere. For scholars analyzing datasets including large numbers of cases, thinking systematically about different types of hybrid systems may encourage reflection regarding which cases belong in a given dataset, or the extent to which analyses should be conducted for particular subsets of a larger dataset because of causal heterogeneity. Such circumspection is particularly important as scholars increasingly try to assess whether patterns of distributive politics

and clientelism are observed across multiple service areas or sectors, as advocated for by Kramon and Posner.⁹²

¹ E.g., Cammett and MacLean 2014; Cammett 2014; Thachil 2014; L. M. MacLean 2010; Brass 2012.

² The Economist 2015; Kariuki and Schwartz 2005; Kashyap and Visvanathan 2014.

³ E.g., Jordana and Levi-Faur 2005.

⁴ La Porta, Lopez-de-Silanes, Shleifer, et al. 1999.

⁵ Collier, LaPorte, and Seawright 2012.

⁶ Cammett and MacLean 2014.

⁷ Searches conducted using the Web of Science utilizing the terms “public goods,” “provision,” and “data;” included studies explain *variation* in provision.

⁸ This count does not include “lab in the field” or other laboratory experiments focusing on public goods games unless articles contain a discussion of the implications for provision in concrete settings.

⁹ Studies do not always use the term co-production, but describe arrangements consistent with Ostrom 1996.

¹⁰ Miguel and Gugerty 2005.

¹¹ E.g., La Porta, Lopez-de-Silanes, Schleifer, et al. 1999; Alesina et al. 2003; Franck and Rainer 2012.

¹² Note that others have used the term “hybrid” to refer to individual service providers that do not fall neatly in standard organizational categories such as government, NGO, private firm e.g., L. MacLean and Brass 2015.

¹³ MacLean 2010.

¹⁴ Cammett 2014.

¹⁵ Thachil 2014.

¹⁶ Brass 2012.

¹⁷ MacLean 2014.

¹⁸ Note that their table 2.4 implies that provider characteristics will be uniform in single countries, e.g. both non-state providers and the state are weak in India. Their earlier distinctions in Table 2.2, however, point to a variety of organizations of varying strength and formality that may exist in particular contexts, suggesting that their framework is best applied to particular NSP-state interactions.

¹⁹ Gough and Wood 2004.

²⁰ Cammett and MacLean 2014.

²¹ Gough and Wood 2004.

²² Collier, LaPorte, and Seawright 2012.

²³ A public private partnership (PPP) involving joint ownership and management by public and private sector partners would fall midway on this spectrum.

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- ²⁴ Within the infrastructure policy literature, Butler (2008) terms regulated private provision “hybrid” service provision. Meanwhile, Ferro et al. (2012) conceptualizes “hybrid” service provision in terms of the coexistence of formal and informal sector service providers.
- ²⁵ Cammett and MacLean 2014, 51.
- ²⁶ Min 2015.
- ²⁷ In other words, the states would be able to provide services directly if they choose to do so.
- ²⁸ E.g., Dubash and Morgan 2013; Murillo 2009; Post 2014.
- ²⁹ Goodfellow 2015.
- ³⁰ This review includes the transportation and water policy literatures.
- ³¹ Herrera and Post 2014.
- ³² Berg and Danilenko 2011, 20.
- ³³ See Asian Development Bank 2004; 2012, Bakker 2003, and Collignon and Vezina 2000.
- ³⁴ Herrera 2014; Herrera and Post 2014.
- ³⁵ All but four state providers are now state-owned companies incorporated under private law Post 2014.
- ³⁶ Service continuity figures from van der Berg and Danilenko 2011, 48. Coverage estimates from Post (2014).
- ³⁷ Foster 2005, 3.
- ³⁸ Schusterman et al. 2002, 66 describe the Buenos Aires Metropolitan Area case.
- ³⁹ Post 2014, Chapter 2.
- ⁴⁰ See Acey 2011, 7–9, 14–15 on Lagos, Nigeria; Al-Hamdi & Alaerts 2000, 1–2 on Sana’a City, Yemen; Kyessi 2005, 3 on Dar es Salaam, Tanzania; Bakker 2007, 856–857 on Jakarta, Indonesia, and Pattanayak *et al.* 2005, 1–4 on Kathmandu, Nepal.
- ⁴¹ Savedoff and Spiller 1999 provide the classic version of this argument. See also Collignon & Vezina 2000, 16 on the “vicious cycle” plaguing many Sub-Saharan African water utilities.
- ⁴² Acey 2011, 7.
- ⁴³ Kjellén 2000, 144–145; Kyessi 2005, 3.
- ⁴⁴ See WHO-UNICEF JMP 2014 estimates for household connections. See also Keener et al. 2010, 4.
- ⁴⁵ E.g., Estache, Gomez-Lobo, and Leipziger 2001, 1185.
- ⁴⁶ See Kjellén, & McGranahan 2006, 4–5 and Solo 1999, 121–122 for overviews. On Manila, see Cheng 2014, 66. On local entrepreneurial efforts in peri-urban Vietnam, see Spencer 2008, 216.
- ⁴⁷ In recently decolonized countries, economic crises of the 1970s and 1980s tended to undermine the ability of service providers to expand services enough to redress inequalities in access dating from the colonial era Bayliss 2008, 101; Nilsson and Kaijser 2012, 279; Smith 2004, 377; Wunsch 1990.
- ⁴⁸ See Keener et al. 2010, 18 on Sub-Saharan Africa. See also Kjellén and McGranahan 2006, 13 on a number of cases and Kooy 2014, 43–47 on the Jakarta case.

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- ⁴⁹ On the reluctance of local utilities to expand into informal settlements in Sub-Saharan Africa, see Collignon and Vézina 2000, 20; on the Philippines, see Cheng 2014, 60–61. On rents and lack of expansion, see Lovei and Whittington 1993, 1958.
- ⁵⁰ Service frequency and timing can vary dramatically even within single cities, variation not captured by IBNET.
- ⁵¹ McKenzie and Ray 2009, 445–446.
- ⁵² Burt and Ray 2014, 107.
- ⁵³ McKenzie and Ray, 2009, pp. 245-247.
- ⁵⁴ Graham, Desai, and McFarlane 2013, 131–132.
- ⁵⁵ E.g., Angueletou-Marteau 2008, 6; Graham, Desai, and McFarlane 2013, 130.
- ⁵⁶ E.g., Anand 2011.
- ⁵⁷ E.g., Bjorkman 2015, 218–219.
- ⁵⁸ Cooper 2011, 83–88.
- ⁵⁹ Ranganathan 2014, 93–100.
- ⁶⁰ Graham et al. 2013.
- ⁶¹ WHO-UNICEF 2015.
- ⁶² See McKenzie and Ray 2009, 454 on Chennai.
- ⁶³ See Rangathanan 2014 on the Bangalore case.
- ⁶⁴ Chang and Yan 2000 notes that this is the case for most large cities in Latin America, and for Malaysia, Korea, Singapore, and the Philippines. Exceptions include the largest Indian cities and a few North African countries, where public sector agencies operate urban bus services directly K. M. Gwilliam 2001, 102; Torres-Montoya 2008, 10.
- ⁶⁵ See Barter 2008, 105 for an overview of standard regulatory models.
- ⁶⁶ Gomez-Ibanez and Meyer 1991, 17 originally described the supply or regulatory “cycle” in public transport, applying it to both developing and developed countries.
- ⁶⁷ Muñoz and Gschwender 2008, 53.
- ⁶⁸ Ferro, Muñoz, and Behrens 2012, 5.
- ⁶⁹ Ibid.; Muñoz and Gschwender 2008, 50–51; Tamblay, Galilea, and Batarce 2013, 9–11.
- ⁷⁰ Beltrán, Gschwender, and Palma 2013, 80.
- ⁷¹ In 2013, the government also replaced the presidential commission originally charged with regulation with a new directorate for metropolitan public transportation with clearer powers.
- ⁷² The complexity and length of the procurement process conferred important leverage upon operators in negotiations, as it was very cumbersome to replace existing operators Galilea and Batarce 2016, 139.
- ⁷³ Cervero 2000, 10; Cervero and Golub 2011, 494; Godard 2005; Shimazaki and Rahman 1996.
- ⁷⁴ Godard 2005, 235.
- ⁷⁵ Cervero 2000.
- ⁷⁶ Ken Gwilliam 2008, 1186; K. M. Gwilliam 2001, 102.
- ⁷⁷ See Gwilliam 2000, 1 on regional trends in Sub-Saharan Africa, Gwilliam 2008, 1186 on Ethiopia and the Cameroon, and Gwilliam 2000, 4 on Bangladesh.

⁷⁸ See, for example, Cervero 2000, 74 on the Philippines, McCormick *et al.* 2011 on Kenya, Syabri and Pradono 2013, 8 on Indonesia, and World Bank 2005, 13 on Kenya, Senegal, and Uganda.

⁷⁹ E.g., Cervero 2000, 66–67; Cervero and Golub 2011, 497.

⁸⁰ Cervero and Golub 2011, 497; Ken Gwilliam 2008, 1189–90.

⁸¹ Klopp *et al.* 2014.

⁸² Salon and Gulyani 2010, 646.

⁸³ Chitere 2004, 1; Kapila, Manundu, and Lamba 1982, 2.

⁸⁴ McCormick *et al.* 2011, 374–5.

⁸⁵ *Ibid.* 378; Orero and McCormick 2013, 279.

⁸⁶ Chitere 2004, 6.

⁸⁷ Cervero 2000, 155.

⁸⁸ Klopp 2012, 8.

⁸⁹ LeBas 2013, 248.

⁹⁰ Chitere 2004, vii; Kapila, Manundu, and Lamba 1982, 11; Klopp *et al.* 2014, 7; Munene 2013.

⁹¹ For example, it may be that the descriptive typology works less well in contexts of state failure.

⁹² Kramon and Posner 2013.

Table 1. Hybrid Systems of Local Public Goods Provision

| | | Prevalence of Non-Sanctioned, Private Providers | |
|----------------------------------|---------------------------|---|--|
| | | <i>Marginal</i> | <i>Extensive</i> |
| Type of State Involvement | <i>Direct Provision</i> | <u>State-Dominant</u> Electoral, regime-maintenance, and bureaucratic politics | <u>Supplemented State</u> Electoral, regime-maintenance, and bureaucratic politics <i>and</i> Collusion, extraction (from state <i>and</i> non-state providers) |
| | <i>Indirect Provision</i> | <u>Regulated Provision</u> Formal regulatory politics | <u>“Free” Market</u> Self-regulation <i>And</i> Collusion, extraction (from providers) |

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